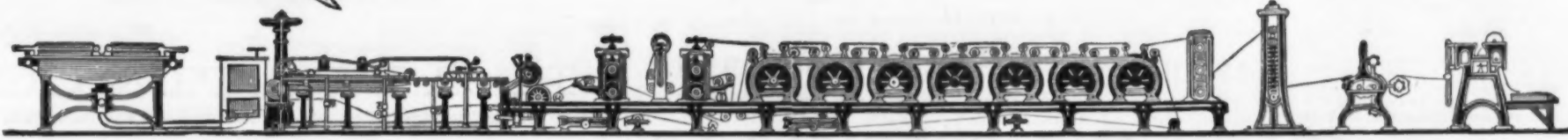


THE PAPER TRADE JOURNAL.



"The Consumption of Paper is the Measure of a People's Culture."

VOLUME XIII.—NO. 4.

NEW YORK, JANUARY 26, 1884.

WHOLE NUMBER 508.

Trade Topics.

Improvement in Wire-Cloth.

The purpose of this improvement in Four-drainer wires is to produce a wire-cloth of greater strength without interfering with the passage of water from the paper-pulp lying thereon in the customary process of paper-making.

A further object is to give a greater material surface to a given portion of fabric, whereby the quality of the paper is improved and a saving of fine "stock" is effected.

The drawing represents a piece of wire-cloth magnified, illustrating the arrangement of the wires therein.

Hitherto wire-cloth has had the wires arranged approximately equidistant apart, both in the warp and woof, so that the openings between the wires were approximately square. In this construction the wires are arranged as shown, *a'* being wires arranged close together, with a small opening, *d*, between, forming in one sense a "double wire," as, for convenience, it is denominated. This double wire alternates with a single wire, *b*, having wider spaces, *c*, laterally adjacent. Such wires *a' b* preferably form the warp of the fabric and take the longitudinal strain of the belt.

In manufacturing the fabric each strand of the double wire lies in a separate heddle; but as they approach the reed they come together, and in that manner pass through a single "dent" therein. The warp passes alternately above and under the wires *a'*. The single wires *b* pass through separate dents individually.

Apparatus for Drying Paper.

British letters patent have been granted to Alexander Annandale, for an improved apparatus specially designed for drying paper at the time of its manufacture, but which is also applicable for drying paper when colored, printed, or otherwise treated subsequently to its first manufacture; or for drying woven or web fabrics of various kinds. Instead of passing the paper in contact with metal cylinders heated by steam, as is done with some kinds of paper; or instead of passing the paper round cylinders or drums made with laths with spaces between them, and with steam pipes below to supply heat, together with fans to produce circulation, the paper is by this present invention passed round metal cylinders heated by steam, but is prevented from coming in contact with the metallic surfaces by wooden laths or spars placed so as to hold the paper or other fabric at a suitable distance from the cylinders. With this arrangement there are spaces for the circulation of air between the cylinder surfaces and the paper; and while the drying action of the air is better than that of metallic surfaces in immediate contact with the paper or of the felts ordinarily used with some of the drying cylinders of paper-making machines, there is also the advantage that the temperature is more nearly alike on the two sides of the paper than when there is the hot metallic surface touching one side and the atmosphere on the other side. Among the advantages of the improved arrangements as compared with existing air-drying plans, and the greater uniformity of the heat and regularity of its action applied to the paper at the various stages of its progress; the freer escape of the moisture-laden air that has acted on the paper, and economy of the heat which is brought nearer to the paper by the cylinders and waste thereby avoided.—*Paper-Makers' Circular*.

The First Paper Mill in Germany.

The first paper mill in Germany was in Nuremberg, and Koberger's printing-house, with its twenty-four presses, was so attractive to authors that they settled in Nuremberg in order the more conveniently to oversee the printing of their works. Watches, called "Nuremberg Eggs," were first made about 1600, the clarinet was invented there, and church organs were better made than in any other German town. A new composition of brass, the air-gun, and wire-drawing machinery were all Nuremberg devices. The filigree silver and gold work—the medals, images, seals and other artistic jewelry which were made by the fifty master-goldsmiths who dwelt there—were famous far and wide; and this variety of manufactures was increased by Hirschvogel, an artisan who traveled in Italy and learned to make majolica. His factory, established at Nuremberg in the year 1507, was the first in all Germany in which such ware was made. It is not certain that playing-cards were invented in Nuremberg, but they were manufactured there as early as 1380,

and cannon were cast there in 1356; previous to this they had been made of iron bars soldered together lengthwise and held in place by hoops. In short, the manufacturers of Nuremberg were so widely known as to give rise to a proverb,

"Nuremberg's hand
Goes through every land;"

and thus the city had the sort of importance which success and wealth bring to a person or a place.—*From Clara Erskine Clement's "Stories of Art and Artists," in St. Nicholas for February.*

Pulp-Washing Machine.

The illustrations serve to give an idea of Quirin's machine for washing pulp. The features of novelty in this device are said to be a horizontal chamber in connection with an upright chamber with a gate and elevated overflow, to discharge dirt and impurities, with a continuous flow of water, keeping the box full during the operation.

Figure 1 is a top view of the machine; Fig. 2 a vertical section.

A A is the box, made of wood or metal, being put together in any substantial manner to be water-tight, and provided with boxes at either end to support the shaft B, which may be made of wood or metal, provided with prongs C, running through, as shown in the drawings, and projecting on four sides.

A piece of wood or suitable metal is fastened near the bottom of the box, leaving a space for the water to circulate, and is provided with vertical projecting prongs, standing in such a position that the prongs or beaters, C, in revolving pass between them.

F is the pulley for driving the shaft.
G G represents a circular false bottom, containing a netting or screen, H.
I is the inlet for water; q and N are outlets.

The operation of the machine is as follows: The pulp to be washed is thrown into the box. The gate O is open, the gate P being closed. The shaft B revolves, and by the action of the prongs is thoroughly mixed with the water, which is continually flowing through the inlet I and passing through the screen or netting H in the false bottom into the chamber L L', and overflows at m into the discharge-spout N. When the water at the overflow m becomes clear, the gate O is closed and the gate P is opened, and the pulp already washed is discharged through the spout q into a receptacle provided for drawing off the water.

Sizing with Ammonium Albumen.

The advantages which paper treated with animal size has over that prepared with resin size is too well known to require dilating on here.

A chief reason why, on the side of manufacturers, animal size for particular sorts of paper finds little favor is the length of time consumed in the drying of the paper.

It requires several experienced hands; and so generally, where animal sizing is used, it is only applied to the finer papers.

Latterly, where there has been much demand for the animal-sized paper, the slow preparation has been a source of difficulty to many manufacturers.

In the German Imperial Patent, No. 25,757, a process has been patented which will replace the hitherto used animal sizing, and which, among other advantages which it has, dries the paper in far shorter time, and renders it generally possible to complete the paper on the machine.

Before entering into the description of this size and its manipulation, we will speak shortly of the nature of size.

The different sorts of size hitherto in use in paper-making, as bone size, gristle size, &c., and which are designated shortly as albuminoids, have a great similarity to the white of egg kinds of bodies of animal origin, albuminades. Great as this similarity is, the two kinds divide from one another in that the albuminoids are soluble in water, undergo no change by long boiling, and change the alkalies themselves into glucose, slowly in cold, but quicker by heating.

The albuminades which are dissolved origin-

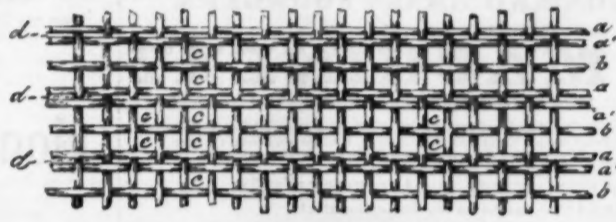
ally in blood and milk become, in blood through the action of the air, and in milk through heating to 130° C., insoluble into fluidity.

They are also insoluble by heating, and are only rendered soluble by a small addition of alkalies.

These properties of albuminades are utilized to provide a substitute for the size hitherto in use.

The albumen of birds' eggs and that contained in blood must be considered as too dear for the purpose, but in casein a substance is found which can be used for the desired purpose, and can be obtained in sufficiently important quantities to be in a position with regard to price to replace the hitherto used size.

As for the surface-sizing of paper, alkali is generally used for the dissolving of the albuminades, which salts, after the drying of the paper, remain in the bulk and work injuriously

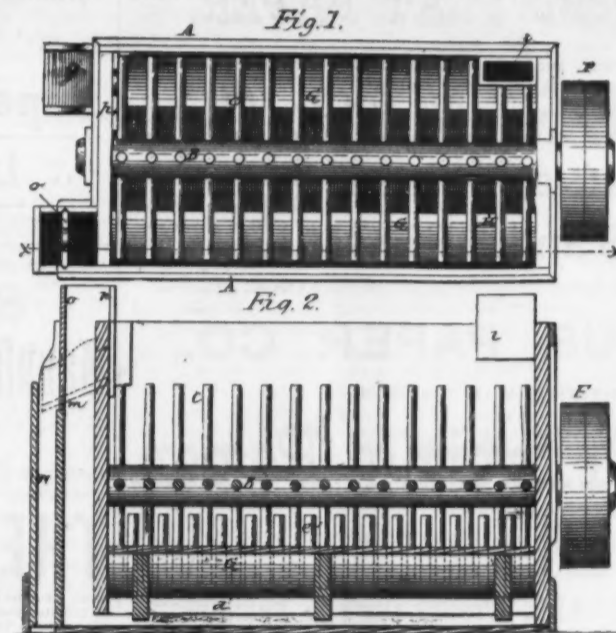


IMPROVED WIRE-CLOTH.

on the fibres; therefore salts of ammonia should only be used to bring the albuminades to a soluble condition.

The ammonia salts volatilize in the air at a temperature under the evaporating temperature of water.

Albuminades brought into solution in this manner and with the following ingredients are called ammonium albumen, whose preparation is as follows: 100 kgs. of dry casein is worked thoroughly in with 10 kgs. of pulverized carbonate of ammonia, and to facilitate the solu-



PULP WASHING MACHINE.

tion of the albuminade about $\frac{1}{2}$ to 1 kg. of phosphate of ammonia is added—that is to say, of that salt which the albuminade in milk has in solution. The original white color changes to a pale yellow.

The working in should be continued till the bulk shows an even appearance, free from lumps.

Ammonium albumen is freely soluble in cold water. The solution forms a yellowish colored milky fluid, which, if rubbed between the fingers, feels somewhat sticky, only so long, however, as ammonia is present.

The relation of the ammonium albumen to the clay salts renders it not only applicable to surface sizing, but also to bulk sizing.

In the latter the ammonium albumen is mixed with resin size placed in Hollanders. The albuminades are not decomposed in consequence of the alkalies held in the resin size.

While the albuminoids become changed into glucose—that is to say, a substance which possesses no starch strength, but if contained in great quantities in paper causes the paper to have no strength, while the glucose imbibes moisture from the air, whereby the writing runs.

The application of ammonium albumen to bulk sizing is not interfered with by cost, as the cost is not greater than the old process.

The use of ammonium albumen for surface

sizing is after the same manner as the old process. It is, however, well to heat the paper after drying; as in this case the albuminades become freely insoluble, so that the paper, after damping and subsequent drying, retains its capability of resistance to the penetration of the ink, which the albuminoid-treated paper loses under similar treatment.

The ammonium-albumen treated paper has at first a sticky appearance, but after exposure some time to the air, so that the ammonia present is volatilized, it is in such a condition of dampness that it can be dried with ease on the drying machine.

The hygroscopic property of paper sized with ammonium albumen is much less than of those treated with albuminoids, which is worthy of consideration.

A sample of paper, whereof the sized quadrature weighed 98 g., and after dried at 100°, and then exposed for some time in a damp atmosphere, took in the case of ammonium-albumen sized paper, 2.7 g. moisture from the air, while the albuminoid sample took 5.7 g.

As the power of taking water from the atmosphere is only half as great in the ammonium-albumen sized paper as in the albuminoid, there is no danger of the paper being penetrable by the ink, as is often the case in the latter.

After many years' experience, I find that the resistance power of paper treated with ammonium albumen to the penetration of ink is greater the longer it is exposed to the air.

The contained acid binds the soluble albuminade with the insoluble portion, which protects the paper from the penetration of the ink, and the paper becomes more capable of resistance.

Paper treated with ammonium albumen possesses all the advantages which the sizing with albuminoids gives the paper; the quality produced is better, and the working manipulation is much simplified; so that ammonium albumen, whether for bulk sizing or surface sizing, can, with advantage, obtain an entrance into paper manufacturing.

The advantages of paper prepared with ammonium albumen may be shortly summed up as follows:

1. Paper sized with ammonium albumen has greater firmness and a parchment-like feel.
2. Paper sized with ammonium albumen offers the greatest resistance to the penetration of ink.
3. Paper treated with ammonium albumen retains its pure white color.
4. As a part of the albuminade at once—the remainder after some time—becomes insoluble in water, the paper, after being wetted with water and dried, can be written on as well as before—a property which is especially useful in drawing paper.
5. As the ammonium-albumen treated paper is so little "hygroscopisch," a loss of firmness is not to be feared.
6. The paper requires only a short time for drying, and can also be dried on the machine.
7. After glazing, the ammonium-albumen sized paper has an agreeable gloss which takes the ink easily.
8. The working cost is not greater than in sizing with albuminoids, though the quality of the paper is better.
9. Ammonium albumen can be used with the greatest advantage not only for surface sizing, but also for bulk sizing.—*Paper Trade Review*.

Engines versus Boilers.

In considering the rate of coal consumption per indicated horse-power, says the *Mechanical World*, steam users are very apt to overlook the fact that economy depends, to a large extent, upon the efficiency of the boiler as well as the engine. There are probably not many engineers who have had large practical experience with the working of steam engines and boilers, who have not met with cases of excessive coal consumption where the indicator diagrams have appeared to be all that could be desired. Indeed, it is not all uncommon to meet with engines the indicator diagrams from which show the initial pressure on cylinder to be almost equal to the boiler pressure, the cut-off beauti-

fully sharp and clear, and the steam-curve almost a hyperbola, and yet the rate of coal consumption seems strangely disappointing. On the other hand, we have seen diagrams which did not appear at all economical, where the steam has been apparently carried on much further in the stroke than economical working would seem to require, and to be thrown away at too high a final pressure, and yet the rate of coal consumption per indicated horse-power has been very low; and even if measured by the actual work done—such as quantity of yarn turned off, &c.—the engines have been found to be working very economically. Among other causes for these apparent contradictions we believe it will be found that the comparative efficiency of the boiler is one of the most important. We have before referred to the importance of measuring the economy of the engine by the quantity of steam or water shown by the indicator diagram to be used per indicated horse-power, and if this were more commonly done, attention would soon be directed to the manner in which the boiler was doing its work. If, for example, it was found that an engine and boiler were working with a coal consumption of, say five pounds per indicated horse-power per hour, and the engine was actually using twenty-five pounds of water per indicated horse-power per hour, then the boiler would only be evaporating about five pounds of water per pound of coal, instead of nearly double that quantity, as it ought to be doing, and, instead of spending money in trying to improve the working of the engine, as is too frequently done, attention should at once be given to the boiler. Large sums of money have been uselessly spent in trying to reduce a high rate of coal consumption, through assuming that the engine alone was answerable for the waste of fuel. There are many causes for a boiler giving out a very low rate of evaporative efficiency.

It may be very heavily incrustated in the interior, or the plates in the external flues may be thickly coated with soot, and, as scale and soot are both bad conductors of heat, much more fuel will be required to raise the steam than if these parts were well cleaned. Again, the draught may be bad, or the boiler may be carelessly attended to, or uncovered and exposed to the weather, all of which things will materially affect its evaporative efficiency. Assuming a first-class boiler to evaporate nine pounds of water per pound of coal, with an engine using, say eighteen pounds of water per indicated horse-power per hour—as our best engines probably now are doing—we have at once a coal consumption of two pounds only per indicated horse-power per hour, and with a good engine and good boiler, it will be seen that this rate of coal consumption should be commonly attainable. The importance of considering the economy of the engine apart from that of the boiler may be shown in another way. In putting down a new boiler, or in determining the size of boiler required, the question often arises with a steam user as to how many indicated horse-power a boiler will drive. Some will say, for instance, that a seven-foot Lancashire boiler twenty-eight feet long will drive one hundred and fifty indicated horse-power. The Manchester Steam Users' Association some years ago stated that such a boiler was capable of developing two hundred indicated horse-power with the steam applied to a fairly-economical engine. Very little consideration will serve to show that the horse-power developed by a boiler is largely dependent upon the economy of the engine. The real power of the boiler should be measured by the pounds of water it will evaporate into steam per pound of coal, from water of, say 212° temperature. If, for instance, a boiler evaporated ten pounds of water per pound of coal, and consumes eight hundred pounds of coal per hour, or twenty tons per week, and an engine requires forty pounds of steam per horse-power per hour, it would give out two hundred indicated horse-power; but if a more economical engine were used, requiring only twenty pounds of water per indicated horse-power per hour, the boiler doing precisely the same amount of evaporative duty would develop four hundred indicated horse-power. Hence we see it is essential, in order to arrive at a true result of the working of engines and boilers, that the relative economy and efficiency of each should be taken separately. If this were more commonly done, money would not be so often spent uselessly in endeavoring to improve the engine when the boiler was answerable for the wastefulness, and more attention would be paid to the general care and keeping of the boiler, and to work done in the stokehole, where, we believe, there is much more room for improvement than most steam users seem to be aware of. Thin firing, with the bars allowed to get bare in places,

causing a large inrush of cold air, and the dampers kept wide open, instead of being carefully manipulated so as to properly regulate the combustion, is, we believe, often the cause of great waste of fuel, for which the engines are in too many instances blamed.

The common and empirical rules for determining the so-called "nominal" horse-power of boilers by reference to the sectional area, or to the amount of heating surface, are both misleading and mischievous, and ought, with other "rules of thumb," to have been long ago discarded. We should not then have had, as we have now, boilers of one type capable of developing with good engines nearly ten times the amount of their "nominal" horse-power, and other types of boiler, such as small verticals, scarcely able to do more than their "nominal" power. The efficiency and power of a boiler, no matter what its type, should be measured by the quantity of water it will evaporate into steam for each pound of fuel consumed, without reference either to its heating or grate surface, and until some such standard of efficiency is adopted, no satisfactory comparison of one boiler with another, or the relative efficiency of engines and boilers, can be well arrived at.

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The Cincinnati Commercial Gazette, March 19, says: "One of the latest industries estab-
lished at Tippicanoe City, Miami Co., Ohio, is the Straw Board Paper Mill—one of the
most thoroughly equipped in the United States. The capital stock is \$50,000, all of which
has been taken and paid up. The grounds of the works cover some ten acres, and with the
two thousand tons of straw piled up in stacks near the buildings, appearances indicate
the Pyramids of Egypt. The buildings and machinery are all entirely new, and are of the
most perfect of the business. The product is entirely of steam-dried straw boards, and has been
pronounced by revelation to old sufficient to for extent that speaking to the Commercial Gazette
always sure to get additional orders our goods are simply the most and we are not afraid to compare
foreman of our works has no standing of the straw-board busi- his skill as well as to our splendid machinery." A railroad track
connects the mill with the Dayton and Michigan Railroad, which gives them first-class shipping facilities.
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Correspondence.

Holyoke Notes.

[FROM OUR REGULAR CORRESPONDENT.]

Holyoke, Mass., January 24, 1884. We have had some agitation during the past week on the question of reducing wages in the paper mills...

The Valley Paper Company has gone to the Riverside Company a second time for a finishing foreman...

The wedding of John Zwiler, employed at the Hampden Glazed Paper Works...

William Walsh, the machine-tender, who was elected city messenger...

J. A. Snell lost his election as chief engineer of the fire department...

The Valley Paper Company has elected these directors for the ensuing year...

George A. Clark, of the Newton Paper Company, was chairman of a committee...

A new bank is about to be organized in the city, to be called the Holyoke Fourth National...

Daniel Sullivan, at the Albion Paper Mill, had some fingers crushed...

We have had cold weather the past week, but it is raining to-day...

Boston Notes.

[FROM OUR REGULAR CORRESPONDENT.]

EASTERN OFFICE LOCKWOOD PRESS, 49 Federal St., Boston, January 24, 1884. I have no material change in the paper trade to report...

Chemicals continue to hold firmly, but the demand is light. Very little is going into store...

The straw-board trade is perfectly demoralized, and the principal dealers here are inclined to criticize the actions of the Western manufacturers...

boards at extremely low rates, and even taken yearly contracts at these low figures. Here I have been instructed by some of the mills...

Spaulding & Tewksbury, another prominent house of this city which handles large quantities of Western boards...

"What do you think of trying to raise the price of straw-boards in the East to \$45 per ton? At our meeting here last week of the straw-board manufacturers...

"Satisfy the manufacturers in keeping up prices!" said Mr. Spaulding. "How can we keep up prices when the mills come into the market and undersell their own agents..."

The United States government has had printed a chart of postal statistics covering the period since the organization of the government in 1790...

Warren J. Robinson, printer, Boston, Mass., has been attached. The Keystone Clay Company's clay is said to be in very great demand...

The annual dinner of the Stationers' Board of Trade will occur on the evening of February 15, at Delmonico's, Fifth Avenue and Twenty-sixth Street...

The Springfield Republican says that George R. Dickinson, James L. Hodge, John E. Clark and Henry S. Dickinson, a majority in number and interest of the members of the corporation known as the Excelsior Paper Company...

Alling & Cory, paper dealers, Rochester, have moved into new quarters, located at the corner of Exchange and Wilber streets...

James Cahill, a prosperous paper dealer of Oakland, Cal., returned recently from his bridal tour in Europe...

The Deane Steam Pump Company, Holyoke, Mass., has fitted up the necessary pumping apparatus for the water-works of nine cities...

The Chicago Metal and Paper Stock Exchange, a corporation formed after the plan of the New York Metal Exchange...

The Deane Steam Pump Company, Holyoke, Mass., has fitted up the necessary pumping apparatus for the water-works of nine cities...

Personals.

J. N. Brown, late with the De Witt Wire Cloth Company, is now with Buchanan Bolt & Co., Holyoke, Mass.

J. W. McCallum, formerly salesman and city buyer for J. W. Lyon & Co., associated himself, on January 1, with the well-known packer of paper stock, Eugene Sullivan...

In Town.

Thomas Tolson, of J. A. Dushane & Co., and Mr. Dillon, Baltimore, Md.; J. Howard Friend, Carrollton, Ohio; George R. Dickinson, Moses Newton, J. C. Newton, Mr. Kirkham and Mr. Caldwell, Holyoke, Mass.; Wellington Smith, H. Garfield, P. C. Baird, John Verran and J. A. Decker, Lee, Mass.; L. L. Brown, Adams, Mass.; W. A. Russell, Lawrence, Mass.; J. A. Crane, Westfield, Mass.; Murray Crane, Dalton, Mass.; George W. Wheelwright and B. M. Wilder, Boston, Mass.; W. L. Bidwell, Rainbow, Conn.; Frank Jones, Ballston Spa, N. Y.; Clark Cornwell, Ypsilanti, Mich.; George Knowlton, Watertown, N. Y.; E. R. Soliday, Lambertville, N. J.

Postal Statistics.

The United States government has had printed a chart of postal statistics covering the period since the organization of the government in 1790. Like all documents which afford an opportunity for comparison between the early beginnings of the institutions of the country and their present expansion...

General Notes.

Warren J. Robinson, printer, Boston, Mass., has been attached.

The Keystone Clay Company's clay is said to be in very great demand. The company has orders on hand that will keep it actively engaged to fill.

The annual dinner of the Stationers' Board of Trade will occur on the evening of February 15, at Delmonico's, Fifth Avenue and Twenty-sixth Street. Among other distinguished guests who have been invited to speak on the occasion are Hon. Warner Miller, Hon. W. A. Russell, Hon. William Whiting, Gen. Stewart L. Woodford and Isaac Bromley.

The Springfield Republican says that George R. Dickinson, James L. Hodge, John E. Clark and Henry S. Dickinson, a majority in number and interest of the members of the corporation known as the Excelsior Paper Company, at Holyoke, have filed a petition with the clerk of the courts asking for a dissolution of the company, and alleging that it has done no business and has neither property nor assets.

Alling & Cory, paper dealers, Rochester, have moved into new quarters, located at the corner of Exchange and Wilber streets. The building is five stories high, handsomely fitted up, and the various departments of the business are arranged with a view to facilitate work...

James Cahill, a prosperous paper dealer of Oakland, Cal., returned recently from his bridal tour in Europe and put up at the Union Square Hotel. He strolled out on Tuesday afternoon and met a pock-marked, red-haired young man in West Fourth Street...

The Deane Steam Pump Company, Holyoke, Mass., has fitted up the necessary pumping apparatus for the water-works of nine cities within the past few months, costing from \$4,000 to \$16,000 each. It is at work on five more of these pumps and engines and three large pumps, one of which is of 28-inch diameter, are ready for export.

PERFORATED SHEET METALS.



For Mills, Elevators, Warehouses, and all kinds of GRAIN-CLEANING MACHINERY. PAPER MILL WORK A SPECIALTY. PERFORATED IRON, COPPER AND BRASS for Vats and Drainer-Bottoms, Washers, Pulp Screens, False Bottoms, Stock Rollers, both Rotary and Stationary; Sand Traps, Bulion Catchers, Suction-Box Covers, Shower Pipes, &c., &c. Iron, Steel, Copper, Brass and Zinc punched any size and thickness. Write for Prices, &c.

THE HARRINGTON & KING PERFORATING CO., No. 51 So. Jefferson Street, CHICAGO. No. 100 Beekman Street, NEW YORK.

WOOD PULP, STRAW PULP. Rotary Bleaching Boilers.

Those who have unsafe Rotary Boilers in use can exchange them for the Loring Patent Rotary, and can be furnished with abundant evidence that the Loring Boiler is absolutely safe, and the only safe Rotary Bleaching Boiler in use. For the production of chemically prepared wood-pulp it has been found extremely difficult to make a boiler that would remain absolutely tight for any considerable length of time...

HARRISON LORING, Boston, Mass.

NOTICE.—I have been informed that irresponsible boiler-makers have offered to build Rotary Boilers with whole wrought-iron heads and a hollow journal, which would be an infringement of my patent. Such boilers will be made by the undersigned at low prices—having special tools for the work—and no extra charge made for the patent right, which would have to be paid by the user if made by an unauthorized person.

HARRISON LORING.



T. F. ROWLAND, Sole Manufacturer, BROOKLYN, N. Y.

D. M. DILLON, Fitchburg, Mass., BUILDER OF MARSHALL'S PATENT BOILERS FOR DIGESTING WOOD FOR PAPER PULP.

The SAFEST, most ECONOMICAL and RELIABLE BOILER ever constructed for the manufacture of WOOD PULP. Owing to the peculiar construction of these BOILERS, whereby the pressure of the boiling liquors against the laps and seams on the inside of the BOILER, is BALANCED by steam pressure inside of the JACKET, and against the outside of the laps and seams, it is impossible for them to leak or waste any part of the liquor...

THE BEST PAPER TESTER. PATENT APPLIED FOR.

This machine is, for Simplicity, Accuracy and Beauty of Construction, the best thing ever devised for testing the strength of paper. It meets the entire approbation of the Trade, and, when introduced, will be found indispensable to all Manufacturers, Dealers and large Consumers of Paper. By its use much useful and surprising knowledge has already been gained concerning the strength of different kinds of stock, and different ways of working it, and the relative strength of Cylinder, Fourdrinier and Hand-made Papers, both lengthwise and crosswise.

REFERENCES AND OPINIONS. "The principle is right and the accuracy undoubted."—J. F. ARDRESON, JR., & CO. "For the purpose it is just the thing, and a neat little instrument."—VERNON BROS. & CO. "It is just what we need."—PERKINS, GOODWIN & CO. "This machine requires no puffing from any paper man. It speaks for itself, and fills a long felt want."—ROBERT GAIR. "It is a first-rate thing, and there is no going behind the record."—GEO. W. MILLAR & CO. "The principle is right, and it is a neat machine."—C. B. HEWITT & BAO. "It is all right. Send me one to the mill right away."—H. V. BUTLER, JR., & CO. "That is a first-rate thing. Send us three."—BLAKE, ROBBINS & CO. "It is a good thing, there is no question about it."—WILKINSON BROS. & CO. "A neat machine, and up with the times."—B. & O. MYERS. "An excellent thing for manufacturers."—M. PLUMMER & CO. "It is as useful as a paper scale."—S. M. GLADWIN. "I think it is a good thing."—H. LINDSEY. "Every paper maker ought to have one."—HARRIS BROS. & CO. "Send us one. I think we shall want twelve."—H. G. CRAIG & CO.

H. P. ELDRIDGE, 140 Nassau Street, New York.

JUTE and LINEN Paper Stock.

J. & W. SMITH, DUNDEE,

Packers and Shippers of
Jute Threads, Jute Ropes and
Baggings, Manilla Ropes,
Bleached Linen Cuttings and
Threads, Linen and Cotton Rags.

Offices:
CALCUTTA BUILDINGS.
Warehouses:
EXCHANGE STREET,
DUNDEE, Scotland.

JAS. KENYON & SON

Derby Street Mills,
BURY,
Lancashire, ENGLAND.
MANUFACTURERS OF

FELTS

FOR
PAPER MAKERS.
COUCH ROLL COVERS,
WET and DRY FELTS
OF ALL KINDS.
Agent in United States:
S. G. TRAIN, BOSTON.

JACOB SALOMON & Co.,

Wittenburger Gracht, 1-4.
AMSTERDAM.

Sorters, Packers and Shippers
- OF -
TRADE **JSC** MARK
Cotton, Linen and Woolen

DUTCH RAGS.

Jute Baggings and Wastepapers
CLEANLY AND CAREFULLY SORTED AND PACKED.
ESTABLISHED 1839.

Porritt, Bro. & Austin,

STUBBINS VALE MILLS,
Ramsbottom, near Manchester,
MANUFACTURERS OF ALL DESCRIPTIONS OF

FELTS

Used by Paper Makers.
SOLE AGENTS:
Messrs. H. C. HULBERT & CO.,
53 Beekman St., New York.

GEORGE F. GELBACH,

GENERAL MACHINIST and FOUNDER,
Nos. 2218 to 2224 Pennsylvania Avenue,
PHILADELPHIA, PA.,
Steam and Hand Power
ELEVATORS

WITH
AUTOMATIC DOOR ATTACHMENTS,
and all the MOST APPROVED IMPROVEMENTS.
BEST SAFETY-CATCH NOW IN USE.
Brewers' work, and all kinds of Millwrighting.
Plans and Specifications furnished, when desired.
HEAVY WORK A SPECIALTY.

ATTENTION, RAG ASSORTERS.

SAVE WHAT OLD HAIR CLOTH

you get in rags. We can use LARGE and SMALL
pieces, both BLACK and GRAY. For further
particulars and prices, address
CUYAHOGA PAPER COMPANY,
Cuyahoga Falls, Ohio,
Or M. Loeser & Son, Buffalo, N. Y.

GET THE BEST.
TICONDEROGA PAPER & PULP CO.,
TICONDEROGA, N. Y.,
Manufacturers of
**PURE CHEMICAL
WOOD FIBRE,**
Daily Capacity of Mills, 8 Tons.

With good wood and the pure water of Lake
George, we claim to make an article of wood fibre
for book and fine writing paper unexcelled by any in
the market. Samples by mail when requested.

When People are Traveling Com-
fort and Safety are the

TWO PRINCIPAL OBJECTS IN LIFE!

COMFORT!

"The Erie is by far the smoothest road
I ever traveled on, either in this country
or in Europe; and I consider it the per-
fection of railroad traveling. With the
clean, light and airy coaches, polite attend-
ance, freedom from dust, noise and jar,
we reached Chicago hardly realizing
what a long journey we had performed.
And then such a breakfast as we had the
morning after leaving New York, at
Hornellsville, is certainly deserving
"honorable mention." Such a table as
they have there, with a full half an hour
to enjoy it, is enough of itself to attract
passengers."—Ex. U. S. Minister. E. B.
Washburne.

SAFETY!

"5,491,441 Passengers were carried over the
Erie Railway in 1888. Of this vast number,
only two were killed—one by falling from the
platform of a car on which he insisted on
standing, and the other in jumping from a
train while in motion."—New York State En-
gineer's Report for 1888.

No better evidence than the above need be wanted
that both of these objects are secured to the traveler
who purchases his ticket over the

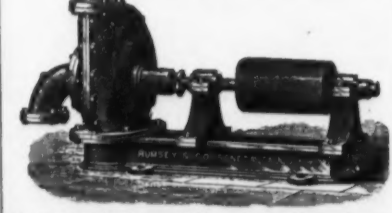
THE GREAT ERIE RAILWAY

LANDSCAPE ROUTE

OF AMERICA.
E. S. BOWEN,
General Supt., New York.
JNO. N. ABBOTT, Gen. Passenger Agt., New York.

RUMSEY & CO.,

(LIMITED),
Seneca Falls, - - New York
MANUFACTURERS OF
Over 800 Different Styles of Pumps,
Also Fire Engines &c., &c.



More than 800 Paper Mills are using our Pumps.
Ask for RUMSEY'S PUMPS,
And address for Catalogue and full information,
RUMSEY & CO., Seneca Falls, N. Y.

THE BABCOCK & WILCOX CO.,

WATER TUBE STEAM BOILERS.
107 Hope St., Glasgow. 30 Cortlandt St., New York.
BRANCH OFFICES:
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PITTSBURGH: 91 4th Ave.
CINCINNATI: 64 W. 3d St.
ST. LOUIS: 707 Market St.
NEW ORLEANS:
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SAN FRANCISCO:
80 S. Mission St.
HAVANA: 80 San Ignacio.
Send to nearest office
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American and New American TURBINE



Used by most of the leading Paper
Mills in the Country.
Show better average results than any
other Wheel in all scientific
and practical tests.
For New Descriptive Pamphlet, address
STOUT, MILLS & TEMPLE,
Dayton, Ohio.

NATIONAL WOOD FIBRE CO.

OFFICE: "MASON BUILDING," BOSTON,
OWNS THE PATENTS COVERING
THE HOLMES FIBRE MACHINE,
By which Wood Fibre, superior to Wood Pulp, can be manufactured at much less
cost than Pulp.

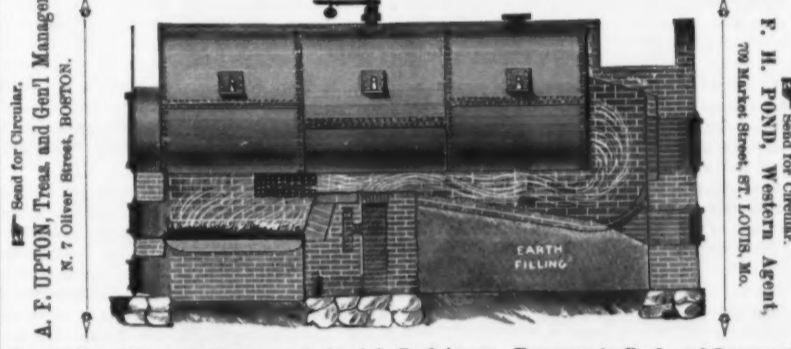
Manufacturers of Paper and Pulp are invited to examine the merits of this Machine. Descriptive
circulars sent upon application. Correspondence solicited.

KEYSTONE CLAY CO.
Office, 4984 Main Street,
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Mines and Works, EASTON, Pa.



Ask by Postal Card for
SAMPLE and PRICE.
Will name Rates Delivered at your Railroad
Station.

JARVIS PATENT FURNACE,



For Setting Steam Boilers and Soda Ash Reclaimers. Economy in Fuel, and Increased
Capacity. Burns all kinds of Cheap Fuel without Blast.

O. E. MERRILL & CO.

BELOIT, WISCONSIN,
— MANUFACTURERS OF —

Paper Machinery

OF EVERY DESCRIPTION.

ESTIMATES ON BUILDING OR REFITTING PAPER MILLS CHEERFULLY FURNISHED



Leffel's Water Wheel.

Prices Reduced.

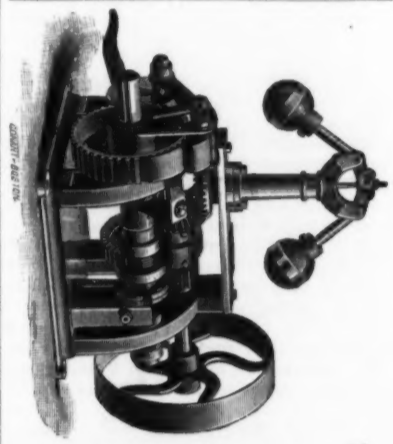
The "OLD RELIABLE" with Important Improvements, making it
The Most Perfect Turbine Now in Use,

Comprising the LARGEST and the SMALLEST Wheels, under
both the HIGHEST and LOWEST Head in this country. Our
New Illustrated Book sent free to those owning water-power.
Write us for NEW PRICES before buying elsewhere. New
Shops and New Machinery are provided for making this wheel.
Address,

James Leffel & Co.,
SPRINGFIELD, OHIO,
And 110 Liberty St., New York City.

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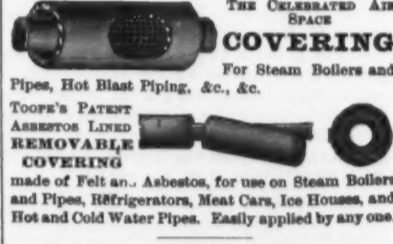
Old, Tried, Reliable.
MANUFACTURED BY
**H. WATERBURY
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Oriskany, Oneida Co., N. Y.
Price Lists sent on application.



WRIGHT MACHINE CO.
WORCESTER, MASS.
Manufacturers of
**WRIGHT'S
WATER WHEEL
GOVERNORS,**
Steam Engine Governors,
Noiseless Duffer Combs.

BOILER & PIPE COVERINGS

BEST BOILER AND PIPE COVERING MADE.



THE CELEBRATED AIR
SPACE
COVERING
For Steam Boilers and
Pipes, Hot Blast Piping, &c., &c.
TOOPE'S PATENT
ASBESTOS LINED
REMOVABLE
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made of Felt and Asbestos, for use on Steam Boilers
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Hot and Cold Water Pipes. Easily applied by any one.

National Steel Tube Cleaner,
for Cleaning Boiler Tubes. Saves its cost every time
it is used, and is endorsed by the best engineers.
ASBESTOS MATERIALS,
FIBRE, MILLBOARD PACKING AND CEMENT.
Address
Chalmers Spence Company, 419 & 421 Eighth St.
NEW YORK.

C. A. CHENEY,

(Successor to BUTTERWORTH & GRIFFITHS.)
— IMPORTER OF —

Paper Stock and Sizing

58 FEDERAL ST., BOSTON.

JOHN DUNHAM, Supt. G. K. SHOOKREAGER, Prop'r.
CHICAGO STEAM BOILER WORKS
and Iron Foundry.



Water, Lard and Oil Tanks and Sheet-Iron Work,
66, 68, 70, 72 Michigan St., CHICAGO.

DIRECTORY.

Cards under this heading will be charged for at rate of \$15 per annum for each card.

NEW YORK HOUSES.

Jute Butt Brokers. CABOT, BOWLES & CO., 81 Water st. CROCKER, HENRY H. & CO., 134 Pearl st., N. Y.

Paper and Paper Makers' Supplies. BELDEN, M. B., Straw and Manila Papers, Paper Bags and Flour Sacks, 45 Dey st., N. Y.

Paper Stock Brokers. BEEBE, IRA L., 132 Nassau st., N. Y. Printed Wrapping Paper. NUGENT, J. S. & CO., Also Paper Bags and Boxes, 335 and 540 Pearl st., N. Y.

Rags and Paper Stock. ATTERBURY BROS., 183 and 255 Front st. BROWN, EDWARD J., 428 and 490 East 23rd street.

Screen Plate Manufacturers and Repairers. ANNANDALE SCREEN PLATE CO., Manufacturers and Repairers of Screen Plates, Paterson, N. J.

FOREIGN HOUSES. Rags and Paper Stock. WALKER, J. R., Dealer in Paper Stock, Woolen Rags and Scrap Metals, 30 and 34 Foundling st., Montreal.

IMPORTATIONS OF PAPER STOCK, PAPER, BOOKS, CHEMICALS, &c. IMPORTS of Paper and Paper Materials, Books, &c., at the Port of New York, for the week ended January 18, 1884.

OUT OF TOWN HOUSES. Architects. TOWER, D. H. & A. B.—Paper and Pulp Mill Designs a specialty. Surveys and Plans made for Mill Sites, Dams and Canals.

Paper Makers' and Paper Stainers' Colors.

HAMPDEN PAINT & CHEMICAL CO., Springfield, Mass.

Paper Cutters. HOWARD IRON WORKS, Buffalo, N. Y.

Paper Manufacturers. CRYSTAL PULP WORKS, Holyoke, Mass. JERSEY CITY PAPER CO., White and Colored Tissue and Manila Wrapping, 311 Wayne st., Jersey City, N. J.

Paper Making Machinery. EMORY, P. P., & CO., Mfg. of Water Filter Lock Valve, Springfield, Mass.

Rags, Paper and Paper Stock. BRIGHT, ROBT. C., Woolen and Cotton Rags, Metals and Paper Stock, 55 Long Wharf, New Haven, Conn.

PAPER. TOTAL IMPORTS. General Merchandise, for the week ended January 18, 1884, \$5,904,901.

EXPORTS OF PAPER, BOOKS, &c., from the Port of New York to Foreign Ports for the Week Ended Jan. 22, 1884.

AGGREGATES AND VALUES. Paper, reams, 2,480 \$503 Paper, pkgs., 1,539 12,871 Paper, cases, 106 4,386

TOTAL EXPORTS. General Merchandise for the week ended January 22, 1884, \$5,935,765.

NEW YORK IMPORTS. FROM JANUARY 15 TO JANUARY 22, 1884. Paper Stock. John H. Lyon & Co., Cornwall, Avonmouth, 1 bs. old papers, 143 bs. manillas.

PHILADELPHIA IMPORTS. Paper Stock. Order, Pennsylvania, Liverpool, 70 bs. rags. Soda Ash. Cooper, Smith & Co., Pennsylvania, Liverpool, 119 drums.

CHICAGO, MILWAUKEE AND ST. PAUL RY. Striking Head Lines. Are used to call attention to the fact that this is an advertisement of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY.

Are used to call attention to the fact that this is an advertisement of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY. Its EIGHT TRUNK LINES traverse the best portions of Northern Illinois, Wisconsin, Minnesota, Dakota and Iowa.

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Are used to call attention to the fact that this is an advertisement of the CHICAGO, MILWAUKEE & ST. PAUL RAILWAY. Ticket offices everywhere are supplied with Maps and Time Tables which detail the merits of the line.

BOSTON IMPORTS. FROM JAN. 17 TO JAN. 23, 1884, INCLUSIVE. Books. Soule & Bugbee, Bavarian, Liverpool, 1 pkg. Order, Samaria, Liverpool, 2 cs.

PAPER. TOTAL IMPORTS. General Merchandise, for the week ended January 18, 1884, \$5,904,901.

EXPORTS OF PAPER, BOOKS, &c., from the Port of New York to Foreign Ports for the Week Ended Jan. 22, 1884.

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Paper Making and Its Accessories.

BOOKS OF REFERENCE.

THE following is a list of Books of Reference on subjects connected with Paper Making, Chemicals, Colors, Machinery, Hydraulics, &c.: AUERBACH—Anthracite: Its Constitution, Properties, Manufacture and Derivatives. \$5 00

ville Democrat, Leadville, Col. The firm will do business under the style of C. C. Davis & Co. W. G. Blymer, publisher of the Democratic Times, Defiance, Ohio, has sold out to White & Mans.

Edwin C. Stokes has been admitted to an interest in the firm of E. S. Hand & Co., publishers' agents, Philadelphia, Pa.

Hooker, Knox & Tuttle, printers, New York city, have dissolved partnership. Knox & Tuttle continue the business.

Salls & Kent, newsdealers, stationers, &c., Burlington, Vt., have dissolved partnership. B. L. Kent succeeds to the business.

Hagedorn & Sheubrooks, printers, Baltimore, Md., have dissolved partnership. Thomas J. Sheubrooks succeeds to the business.

Edward J. Buckley has been admitted to an interest in the firm of John E. Potter & Co., publishers and booksellers, Philadelphia, Pa.

A. C. Keel, stationer, &c., Fort Wayne, Ind., has taken Louis A. Etsold into partnership, and the firm will do business under the style of A. C. Keel & Co.

G. Walter Snow has been admitted to membership in the firm of Coburn Brothers, printers and stationers, Boston, Mass. The style of the firm has been changed to Coburn Brothers & Snow.

Failures.

Phil. Bohnett, printer, Cincinnati, Ohio, has assigned.

Allen & Gates, stationers, Ware, Mass., have become insolvent.

Aug. Otto Lavidis, bookseller and stationer, Racine, Wis., has been closed out by the sheriff.

An assignment has been made by Bloch & Co., printers and flag manufacturers, Cincinnati, Ohio.

John A. Marcus, dealer in stationery and fancy goods, Philadelphia, Pa., has been sold out by the sheriff.

Hugh M. McNeill, printer and stationer, Allegheny, Pa., is offering to compromise with his creditors at thirty cents on the dollar.

W. J. Clarke, stationer and fancy goods dealer, Montreal, Que., has compromised with his creditors at 50 cents on the dollar.

The International Publishing Company and Book Exchange, New York city, had a meeting of its creditors yesterday with a view to making a compromise. It is thought that it may be able to pay 75 cents on the dollar.

Dr. Edward J. Birmingham, doing business as Birmingham & Co., medical book publisher, No. 28 Union square, has made an assignment to Frederick S. Lyons, M. D., preferring claims to the amount of \$18,322.13, the largest of which is to Miss Birmingham for \$9,527.

H. V. Butler, Jr., & Co., paper dealers, 32 Reade street, New York, suspended this week, and are about to call a meeting of their creditors, with a view of making a compromise. Mr. Butler says that he hopes to be able to make such a proposition as will eventually enable his firm to pay in full. The mill property at Paterson is owned by the Ivanhoe Manufacturing Company, of which H. V. Butler is president and other members of his family are joint owners. It is understood that the mill property is mortgaged for \$60,000. The sheriff is said to be in possession of the office in New York.

Mortgages, Etc.

[In the appended list R. signifies a renewal of a pre-existing mortgage; B. S., bill of sale; and Real, a mortgage on real estate.]

Table with columns: Mortgagee, Amount.

Table with columns: State, Name, Amount.

Table with columns: State, Name, Amount.

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Table with columns: State, Name, Amount.

Table with columns: State, Name, Amount.

The Novelty Book Store (H. E. Siddall, manager, Minneapolis, Minn., has been attached for \$1,162.

Obituary.

WILLIAM C. PLUNKETT.

Gen. William C. Plunkett, who died at his home in Adams, Mass., on Saturday, January 19, was at one time in the paper business. He bought the Richardson & Upton paper mill at Adams about 1877 and organized the Adams Paper Company, his two sons being associated with him; but, after running it a few years, the mill was turned into a cotton mill.

General Plunkett was born in Lenox, where he spent his boyhood. He was the oldest of three brothers—the late Thomas F. Plunkett, of Pittsfield, and Charles H. Plunkett, a leading manufacturer of Hinsdale. Two sisters survive him, Mrs. Samuel A. Hulbert, formerly of Lee, and now living in Pittsfield, and Mrs. Daniel D. Wheeler, of Adams.

He went to the district schools of Lenox, and then for a while attended the old Lenox Academy. After teaching school for a while he went into business for himself in a country store. He moved to Adams about 1850, and became a prominent manufacturer in the town of Adams and North Adams from that time until his death. He made cotton and woolen goods, and as the business increased the mill was enlarged, and the Plunkett Manufacturing Company was formed later. When his sons William B. and Charles T. came to manhood, the mill known as Plunkett & Sons was conducted by them, and he also, in connection with William B., took part in the Greylock corporation later in North Adams. He bought out his partners and established new mills till General Plunkett and his sons either owned entirely or had a controlling interest in some four or five mills in which cotton and woolen goods and gingham are manufactured. He was always considered one of the best business men in the county, and earned for himself a handsome property, which is said to be in good condition, so that his estate will not be difficult to settle. He leaves the two sons above mentioned, who are prominent business men.

General Plunkett was eighty-four years old, hearty and active until within a few months, when he delivered an address in the town hall on the occasion of the reunion of the Forty-ninth (Mass.) Regiment, and caught cold. The general—his title came from the old militia training days—was a striking figure everywhere, being over six feet high, straight and supple as an Indian; he held many offices of trust in the State. He was Lieutenant-Governor of Massachusetts in 1854. He was a member of the State Senate in 1840, and several times represented his district in the lower branch of the Legislature, the last time in 1873-74. He served in the Executive Council with both Governors Rice and Long, and was a member of the Constitutional Convention in 1833. He always took a great interest in town affairs, having held the office of selectman many times, and being for years moderator of the town meetings. He was instrumental in building good school-houses and maintaining creditable schools, and all matters that pertained to the interest of the town found him ready to lend a helping hand. He helped form the Cotton and Woolen Manufacturers' Mutual Insurance Company, of Boston, had been president of the company since its organization and was re-elected to that office last week. General Plunkett will be particularly missed by the Congregational church and Sunday-school, having been one of the most prominent members of the church since its formation in 1840, its most liberal supporter and a deacon almost constantly. He was superintendent of the Sunday-school for forty-two consecutive years.

WILLIAM PERRY.

William Perry, of Holyoke, Mass., at one time a well-known paper maker, died on January 23, at the age of eighty.

Francis Flanders, dealer in paper stock, Lynn, Mass., is dead.

Fires.

M. Gore, publisher, Orlando, Fla., has been burned out. Not insured.

Williams & Wesley, publishers of the Enterprise, Attleboro, Mass., have been burned out.

H. G. McWilliams, stationer, Lowell, Mich., has been damaged \$200 by fire. Not insured.

Charles A. Kiel, bookseller and stationer, Tecumseh, Mich., has been burned out; insured.

Charles S. Case, manufacturer of paper pails, &c., Binghamton, N. Y., has been burned out; fully insured.

The Spectator printing-office, at Hamilton, Ont., was burned on Wednesday. The loss is \$50,000; insurance, \$21,000.

SPECIAL NOTICES.

[Insertions under this heading will be charged 50 cents a line. Payment invariably in advance.]

EUGENE SULLIVAN, Packer of Rags and Paper Stock, 356 & 358, WATER STREET, NEW YORK.

THOS. BUTLER & CO., Rags, Paper Stock, Old Metals, Rubber, 349-353 CANTREY ST., BOSTON, MASS.

Market Review.

OFFICE OF THE PAPER TRADE JOURNAL, 75 NASSAU ST., N. Y. CITY, N. Y.

THE MONEY MARKET.—Loanable funds continue abundant in this market, rates for call loans on stock collateral being 1 1/2 to 2 per cent., and 4 to 5 1/2 per cent. for prime indorsed mercantile notes and acceptances.

The stock market has been depressed, and has at times bordered closely upon panic. Many stocks that had been carried for months have been thrown upon the market.

Government bonds are less firm than of late; the currency sizes sold lower.

Railroad bonds were active and prices generally lower.

The market for sterling exchange was very firm, owing to the continued limited supply of bills and a better demand for sixty-day bills, but the volume of business was not large. We quote:

Table with columns: Instrument, Rate.

THE PAPER TRADE.—Although there is very little of an encouraging nature to be said of the present movement of paper, the prospects of an improvement as the spring season advances are quite promising. In some instances dealers report trade so far this month as in excess of the corresponding month of last year, yet business is being done in a slow and spiritless manner, and the abnormally low prices of nearly every grade of paper failed to stimulate the demand. Buyers generally are supplied against current wants, and are unwilling to lay in quantities for which they do not see an immediate or early outlet into consumptive channels. Competition, it is asserted, was never at any time so sharp in every branch of the paper trade as at present. Print papers hold to a very steady line of values and the same can be said of Manila Wrappings. Straw Wrappings show less irregularity than they did a month or six weeks ago, the product being somewhat under better control.

JUTE BUTTS.—There has been rather more doing in the Butt market during the past week, and values continue firm, in sympathy with the Calcutta market, closing strong for spot at 2 1/2 c. cash. The spot sales embrace 1,800 bales paper quality, and 750 bales Bagging. The transactions in futures include 700 bales paper quality at 2 1/2 c., and 500 bales Bagging at 2 1/2 c. Sales of about 5,500 bales, January or February sailing, from Calcutta, are reported and said to be at 2 1/2 c.

WOOD PULP.—Spruce Pulp continues to be offered somewhat sparingly, and former prices recede steadily, the range of quotation remaining 2 1/2 to 2 3/4 c., according to make and shipping point. Poplar is offering a little more freely, and prices are slightly weaker in consequence, 1 1/2 to 2 c. being quoted delivered at the mills. Some small sales of Norwegian have been made at 1 1/2 c.

WOOD FIBRE.—Chemical Fibre is being contracted for to a fair extent on the basis of 4 1/2 to 4 3/4 c. for Bleached and 3 1/2 to 3 3/4 c. for Unbleached, while in some instances 1/2 c. more is asked for jobbing quantities.

FOREIGN RAGS AND PAPER STOCK.—The market for foreign stock has developed no new feature since our last issue, the general line of values, and the demand being about the same. There is a very small call for Linens, the higher qualities—as for some time past—continuing almost entirely neglected. The fine grades of Cottons although in moderate supply have a very light inquiry. Although the low and medium grades of Cottons attract the most attention, the sales resulting are mostly in very small lots, and at prices within the range current for some weeks past. Recent failures of manufacturers have created a very cautious and uneasy feeling among the dealers and importers, and while many hope and believe that we have already seen the worst of the business difficulties, a large number incline to the belief that many more failures are yet to take place, and in consequence credits will be scrutinized very carefully. The outlook for the immediate future is not very encouraging to dealers for an advance in prices, as at the present rate of import and condition of the stock already here, there is really no basis for it unless a reaction should take place in the demand. The arrivals during the past week aggregate 5,291 bales and bags, embracing 4,641 bales Rags, 373 bales Old Papers, —bales Wood Pulp, and 377 bales Manillas.

DOMESTIC RAGS.—The market is still devoid of features of interest, the demand being extremely light and the supply gradually becoming reduced. While there are no indications of weakness, large buyers could possibly secure some concessions from current prices for future delivery. No. 1 City Whites hold to late quoted prices with a marked degree of steadiness, but on some moderate transactions this week of No. 2 Whites rather better prices have been secured; the former held at 4 1/2 to 4 7/8 c. for the best packings, and the latter at 2 1/2 to 2 3/4 c. Seconds are unchanged. We note, among other sales, 125 bales No. 1 Whites at 4 1/2 to 4 7/8 c., and 90 bales No. 2 do. at 2 1/2 to 2 3/4 c.

BAGGING, &c.—Gunny Bagging remains firm on a quiet market, and importers find it difficult to secure any advance, although Jute Butts are selling 1/2 c. higher than they were when Bagging was being sold at the same figure it is now offering at, the relative difference between the two being about 1/2 c. Bagging at the present price of Butts ought to be considered rather low. There is no anxiety shown on the part of holders of No. 1 Manchester to sell, the range of price being 2 1/2 to 3 1/4 c. London Gunny is held at 1 1/2 c., with some small sales reported at 1.80c. Jute Rope is held at 2 1/2 c. English Manilla firm at 3 1/2 to 3 5/8 c., and Domestic Rope finds purchasers to a moderate extent at 3 1/2 to 3 7/8 c.

OLD PAPERS.—Here and there are some dealers who are moving fair-sized lots of Manillas, Solid Stock, Shavings and Folded Newspapers; but the large supply is a bar to any improvement in prices, and quotations throughout are quite nominal. We quote: No. 1

Manillas at 2 1/2 to 3 c.; No. 2 do. at 1 1/2 to 1 3/4 c.; Folded News, 1 1/2 to 1 3/4 c.; Hard White Shavings at 3 1/2 to 4 c.; Solid Printed Book Stock at 2 1/2 to 3 c., and Soft White Shavings at 3 1/2 to 4 c.; Ledger Stock at 2 1/2 to 3 c.; Mixed Shavings, 2 1/2 to 3 c.; Light Book Stock, 1 1/2 to 2 c.; Commons, 50 to 65 c.; Straw Board Clippings, 50 to 75 c.; Bogus Manillas, 1/2 c., and Binders' Clippings, 1/2 c.

STRAW.—Straw continues to meet with fair inquiry, and prices rule a little firmer. We quote in New York: No. 1 Rye Straw, 55 to 60 c.; Short Rye do. 45 to 50 c., and Oat 45 to 55 c.

ROSINS.—The low grades are dull and barely steady, but there is a little more jobbing demand for the medium and fine, and prices for the latter are slightly higher. We quote yard lots, cartage included, viz.: C Strained, \$1.65; D Good Strained at \$1.75; E at \$1.80; F Good No. 2 at \$1.90; G Low No. 1 at \$2; H No. 1 at \$2.10; I Good No. 1 at \$2.30; K Low Pale at \$2.50; M Pale at \$3; N Extra Pale at \$3.37 1/2 to 3.62 1/2; and W G at \$4 and \$4.50.

CHEMICALS.—There is a firm market for nearly all descriptions of paper-makers' chemicals, but buyers continue to operate rather cautiously and appear unwilling to anticipate their wants to any extent. Foreign markets also continue firm, and prices here are about on a par with those of Liverpool. The slight advance in Bleaching Powder and 70 per cent. Caustic Soda noted last week is maintained. Sales are said to have been made here as follows: 600 cks. Bleaching Powders at 2.40 to 2.50c, to arrive and on the spot, as to brand and quantity; 300 tons Soda Ash at \$1.55 to 1.62 1/2; 200 drums Caustic Soda 70 per cent., at 3.12 1/2 to 3.30c; 100 tons English Sal Soda at \$1.15 to 1.30 spot and to arrive; 500 barrels Lump Alum, at 2c; 300 barrels Ground do. at 2 1/2 c.; 650 barrels Pearl do. at 2 1/2 c.; 1,000 barrels Natrona Porous Alum at 2 1/2 c.; 300 tons Aluminous Cake at \$1.45; 25 cases German Ultramarine at 21 to 23c; 30 cks. Brown Sugar of Lead at 6 1/2 to 6 3/4 c.; 100 bbls. Venetian Red at 1.55c; 20 cks. Yellow Prussiate of Potash at 6 1/2 to 6 3/4 c.; 200 barrels Corn Starch at 3 1/2 c.; 100 barrels Potato do. at 4 1/2 c. and 100 boxes Extract of Logwood at 7 1/2 c.

CHINA CLAY.—The demand for English Clay continues light, but as the spot supply of the leading brands is growing smaller, importers' views are firm on the basis of \$15 for prime to arrive. Sales are reported of 35 tons at \$16 to \$16.50, 25 tons at \$14.50, and 50 tons to arrive at \$16.50. We quote: Prime, \$16 to 16.50; Medium, \$15 to 15.50, and Common, \$13 to 14.50. Southern Clay is quiet and barely steady at \$12, at which price we hear of a sale of 50 cks.

COAL.—Trade is in good shape for Anthracite Coal, and the stock is becoming reduced by half-time output. Seward's Coal Trade Journal says: "Ports and places which had been stated to have a sufficient supply to last until spring are coming into market. It is reported that the heavy demand thus far has been purely local, but from what we gather there is an increasing circle each week of places which are not so well supplied as had been thought to be the case. Apart from the uncertainty of getting coal after it has been purchased, by stress of weather, &c., there is little to stir the even tenor of the trade. We occasionally hear of sales at round circular figures, but these are mainly on manufacturing sizes or on special coals. There is nothing to warrant the starting of spring prices on the basis of the figures at present realized, and if this scheme is tried it will fall of its own weakness. The Anthracite steam sizes now come pretty high, and steam users are looking about for substitutes at lower cost, and we hear of many efforts to effect the desired end. The Bituminous trade is dull and quiet, as is usual at this season of the year. We look for a large output this year, and a low range of prices." Philadelphia and Reading Company at Elizabethport, N. J., quotes Lump at \$4.85; Broken, \$4.40; Egg, \$4.60; Stove, \$4.80 to \$5.05, and Chestnut, \$4.50 to \$4.60. Lackawanna at Weehawken is quoted: Lump, \$3.90; Egg, \$4.15; Stove, \$4.45, and Chestnut, \$4.55.

PRICES CURRENT.

NEW YORK MARKET.

Table with columns: Paper Market, Dealers Selling Prices, and various paper products.

Table with columns: Straw Boards, Wrapping, and other products.

Table with columns: Straw Wrapping, Cigarette Strips, and other products.

Table with columns: Tea Papers, Card Middles, and other products.

Table with columns: Shavings and Old Paper, White Collar Cuttings, and other products.

Table with columns: White Collar Cuttings, Mill Assorted Whites, and other products.

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Table with columns: White Collar Cuttings, Mill Assorted Whites, and other products.

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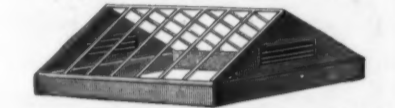
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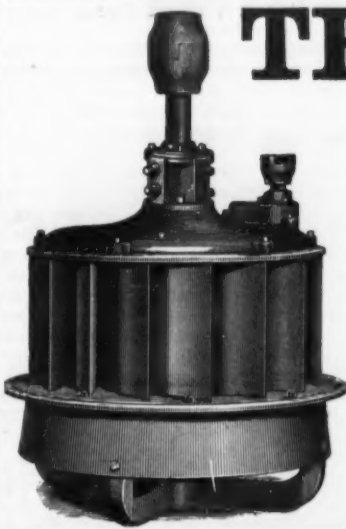
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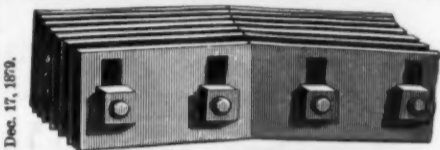
SIZE WHEEL	HEAD IN FEET.	HORSE-POWER.	PER CENT. OF USEFUL EFFICIENCY
15-inch	18.06	30.17	.8632
17 1/2-inch	17.06	36.35	.8930
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30-inch	11.65	52.54	.8076

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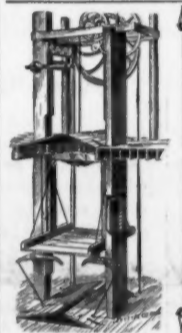
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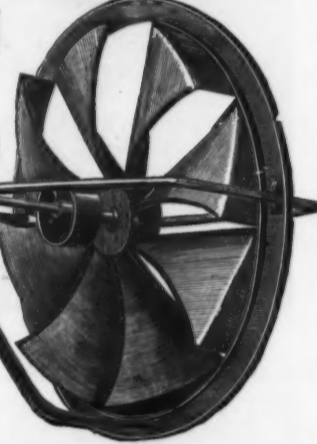
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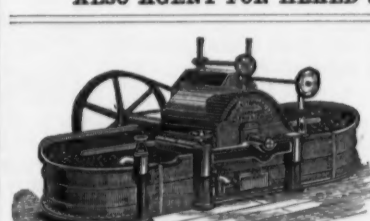


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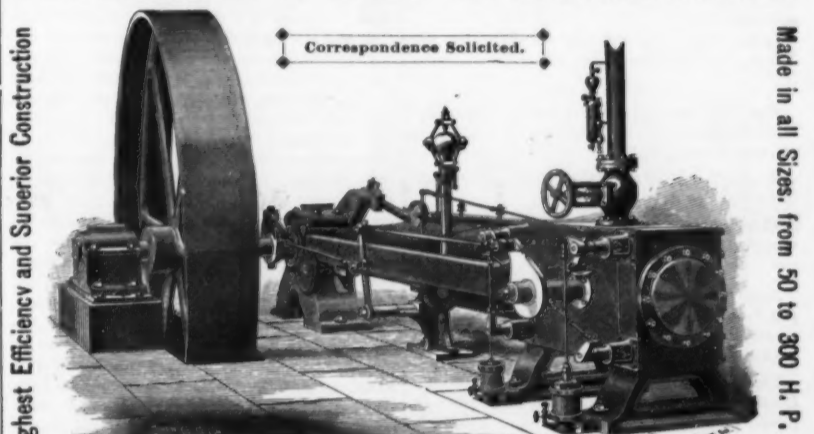
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Manufacturing News.

EASTERN STATES.

The Glen Pulp and Paper Company, of Hartford, Mass., is to start a new wood-pulp mill at the east end of the Hoosac Tunnel, which is to be fitted with improved machinery from Germany, and the inventor has been brought to this country to superintend it.

The new pulp mill at Garvin's Falls, in Bow, N. H., is being run day and night, and the whole production goes to paper mills at Franklin and Lawrence.

The new mill of the Green Mountain Pulp Company, at Middlebury, Vt., complete, cost \$17,000.

The pulp mill at South Wallingford, Vt., idle for months, is soon to resume operations.

Evans' Fibre Manufacturing Company, Boston, Mass., has taken the mill of George A. Shepard, East Jeffery, N. H., and will make wood pulp under the Evans' process.

Wildner & Co., Ashland, N. H., have just put in a 25 horse-power engine to run their No. 1 machine when water is low.

MIDDLE STATES.

The Hunterdon Paper Works, at Glen Gardner, N. J., are almost completed, and will be in operation soon.

L. Kent & Co. have bought the Westfield (N. Y.) paper mill, and have added new machinery.

WESTERN STATES.

The Lick Paper Company, Agnew, Cal., has ordered new Babcock & Wilcox boilers. It is running its mill full time.

Brownell & Miller, St. Charles, Ill., have shut down their mill.

The Minneapolis Straw Board Company, Minneapolis, Minn., has shut down till February 4.

SOUTHERN STATES.

John A. Dushane & Co., Morgans, Md., have put four Babcock & Wilcox boilers, 60 horse-power each, into their Woodbine mill, and have built a new boiler-house.

Thos. F. Scully is running the lower Sugar Creek Mill at Atlanta, Ga. The mill has two 300-lb. and one 500-lb. engines, and a 36-inch cylinder machine, making No. 2 bogus manillas.

The Upper Sugar Creek Mill at Atlanta, Ga., is run by William McNaught & Co., who have relinquished their other mill. This mill has two 350-lb. and one 250-lb. engines and a 36-inch cylinder machine run on manillas.

The Machinery Trade for 1883.

Very few reports from the machine shops which supply paper makers have come to hand. Such as have been received are appended and further returns will be given from week to week until they are exhausted. It should be remarked that some of the shops decline to supply the information sought.

THE BLACK & CLAWSON COMPANY.

Hamilton, O., reports the following list of paper-mill work done by it during the last year:

Mead Paper Co., Dayton, O., 3 dryers 36-inch diameter, 72-inch face, with brass packing-boxes, gears, frames, &c., complete. Remington Paper Co., Watertown, N. Y., a new 86-inch press part; Friend & Fox Paper Co., Lockland, O., a 40-inch cone pulley cutter; Longley Barnard & Co., Middletown, O., a stack of heavy card calendars 16x34 inches, with stands, &c., complete; Vandalia Paper Mill Co., Vandalia, Ill., combination cylinder and Fourdrinier machine; Tipp Paper Co., Tippecanoe City, O., four 36x72 inch and four 28x72-inch dryers with frames, gears, &c., complete; Northumberland Paper Co., Campbellford, Ont., a stack of two straw-board calendars 16-inch diameter, 43-inch face; Friend & Forgy Paper Co., Franklin, O., a 76-cone-pulley cutter; Pennsylvania Pulp and Paper Co., Lock Haven, Pa., 68-inch cone pulley cutter; Remington Paper Co., Watertown, N. Y., seven dryers, 36-inch diameter, 84-inch face, with brass packing boxes; Winnesseege Paper Co., Franklin, N. H., 63-inch cone-pulley cutter; Wolverine Car Roofing and Paper Manufacturing Co., Detroit, Mich., a cylinder machine for paper 3/4-inch in thickness, dryers, 48x56 inches; Plain City Paper Co., Plain City, O., 66-inch cylinder machine; Haldeman Paper Co., Lockland, O., five 28-inch diameter, 68-inch face dryers, with frames, gears, packing-boxes, &c., complete; Erwin Lane & Co., Elkhart, Ind., new Fourdrinier part and patent screen; Xenia Paper Co., Xenia, O., stack of four Knight's dryers, 14x63 inches, with stands, packing-boxes, levers, &c., complete; Andrews & Co., Penn Yan, N. Y., one Fourdrinier machine; Godfrey & Clark, Pittsburg, Pa., 63-inch cone-pulley cutter, and a 4-stack of upright reels; Dager & Cox, Bridgeport, Pa., one Fourdrinier part; Elkhart Straw Board Co., Elkhart, Ind., one 84-inch cylinder machine; Orr & Spencer, Piqua, O., two dryers 36x72 inches, with brass packing boxes and a stack of seven chilled rolls, with stands, pulleys, &c., complete; Dager & Co., Bridgeport, Pa., two 36x56-inch dryers, with frames, packing-boxes, gears, &c.; H. F. Watson, Erie, Pa., a new patent screen; Miami Valley Paper Co., Miamisburg, O., one 36x72-inch dryer and one new patent screen; Pennsylvania Pulp and Paper Co., Lock Haven, Pa., one Fourdrinier part. The company is about completing a cylinder machine for John B. Shepler, Toledo, O., and the rebuilding of two cylinder machines for Godfrey & Clark, Pittsburg, Pa., and reports business fair and outlook rather good.

PHILMONT PAPER MACHINE COMPANY.

This company, located at Philmont, Columbia County, N. Y., reports its sales as follows: One 68-inch cylinder machine to Newton Lefevre for his mill at Linlithgow, N. Y.; one 72-inch cylinder machine, two 700-pound engines and two 15x16-foot bleaches to Hart & Barnes, Brenard, N. Y.; one 15x16-foot bleach to C. F. Davis, Valatie, N. Y.; two 12x12-foot bleaches to

J. W. Rossman & Son, Stockport, N. Y., and two 12x12-foot bleaches to Wilkesbarre Paper Co., Wilkesbarre, Pa. The Philmont Co. is a young concern.

BOSTON MACHINE MANUFACTURING COMPANY.

The Boston Machine Manufacturing Co., of Boston, Mass., reports the following as the principal items of paper machinery furnished by it during the year: Sebago Wood Board Co., South Windham, Me., one 70-inch cylinder machine for forming and drying wood board, having six cylinder molds and twenty one dryers; Umbagog Pulp Co., Livermore Falls, Me., one 70-inch cylinder machine, same as above, also two 30x30-inch pulping engines, extra cylinder molds, &c.; Lincoln Pulp and Paper Co., Lincoln, Me., one 84-inch cylinder machine for forming and drying wood pulp, sixteen dryers, one 72-inch wet machine and four 42x48-inch engines, iron tubs; Angell & Langdon, Greenwich, N. Y., one 72-inch cylinder machine; George West, Ballston Spa, N. Y., one 90-inch Harper improved Fourdrinier machine; Columbia River Paper Co., Portland, Ore., one 72-inch cylinder machine; Nova Scotia Wood Pulp and Paper Co., Mill Village, N. S., one 62-inch wet machine; J. Ford & Co., Port Neuf, P. Q., one dryer part of 43-inch machine; P. C. Baird, Lee, Mass., one wet part for 62-inch Fourdrinier machine; L. Lincoln & Co., North Dighton, Mass., one 40x42-inch pulping engine; New Hampshire Pulp and Paper Co., Bristol, N. H., four 38x42-inch engines, six revolving reels, rag cutters, pumps, screens, &c.; Robert Wetherill & Co., Chester, Pa., two 42x48-inch engines, iron tubs; Russell & Armstrong, Philadelphia, Pa., one 42x48-inch engine, iron tubs. Also additional dryers to P. C. Cheney Co., Manchester, N. H.; Crystal Spring Mill Co., Middleton, Mass.; Moore & Wilson, Waterford, N. Y., and Ward Brothers, Riverton, Conn. Other work was as follows: Winona Paper Co., Holyoke, Mass., one crane with three false bottoms for bleach; Deseret News Co., Salt Lake City, Utah, one 5-roll railroad duster, rag cutter, &c.; Haverhill Paper Company, Haverhill, Mass., one thresher, one crane with four false bottoms for bleach. In addition, a large number of gun-metal covered, chilled and charcoal iron rolls, stop cutters, cone cutters, cylinder molds, composition and iron fan pumps, stuff pumps, screens and screen frames, slitting machines, winding shafts, &c.

THE CLEVELAND PAPER COMPANY.

Cleveland, O., reports sales of Brightman engines in 1883, as follows: Merrimac Paper Co., Lawrence, Mass., one No. 3; Wead Paper Co., Malone, N. Y., one No. 3; Franklin Paper Co., Franklin, O., two No. 3; West Swaney & Jackson, North East, Pa., one No. 2; Wolverine Car Roofing and Paper Manufacturing Co., Detroit, Mich., one No. 4; D. W. & J. C. Newton, Holyoke, Mass., one No. 4; Perrine Paper Co., Franklin, O., one No. 3; J. H. Tangeman & Co., Lockland, O., one No. 3; W. P. Lewis, Dayton, O., one No. 2; New Portage Straw Board Co., New Portage, O., one No. 4; Howland & Co., Sandy Hill, N. Y., one No. 4; N. W. Taylor, South Bend, Ind., two No. 1.

WILLIAM H. HARRIS.

Providence, R. I., built Harris-Corliss engines for the following named paper makers: Newton Paper Co., Holyoke, Mass., one engine of 100 horse-power; Geo. R. Dickinson Paper Co., Holyoke, Mass., one engine of 475 horse-power and two engines of 50 horse-power each; Hollingsworth & Whitney Co., of Boston, Mass., for South Braintree Mill, one engine of 100 horse-power and one of 325 horse-power.

MURRAY & STOUGHTON.

Hartford, Conn., manufacturers of the Medart patent wrought-iron pulleys, report sales of pulleys during the year to Remington Paper Co., Watertown, N. Y.; Star Paper Co., Shortsville, N. Y.; F. G. Weeks, Skaneateles, N. Y.; Weld Paper Co., Malone, N. Y.; Beaver Falls Paper Co., Beaver Falls, Pa.; C. R. Remington, Watertown, N. Y.; Victoria Paper Co., Fulton, N. Y.; Delaney & Munson Paper Co., Unionville, Conn.; Platner & Porter Manufacturing Co., Unionville, Conn.; Hudson River Pulp and Paper Co., Palmer Falls, N. Y.; House & Co.,

Windsor, Conn.; Springdale Paper Co., Westfield, Mass.; Jessup & Moore Paper Co., Wilmington, Del.; New York Pulp Co., Hadley, N. Y.; Glens Falls Paper Co., Glens Falls, N. Y.; Wm. L. Longley, agent (Cumberland Mills), Cumberland Mills, Me.; Denison Paper Co., Mechanics' Falls, Me.; Frank H. Whittlesey, Windsor Locks, Conn.; S. S. Brown Paper Co., Adams, Mass.; Forest Paper Co., Yarmouthville, Me.; Glen Pulp and Paper Co., Hoosac Tunnel, Mass.; Manning & Peckham, Troy, N. Y.

An Italian correspondent of THE PAPER TRADE JOURNAL prefers a request for a sample copy of the paper in the following words: Mr. Director, I beg you to envy me a number for essay of your newspaper, 'PAPER TRADE JOURNAL.' I thank you with my heart." This request has been honored.

Steam Without Fire.

A Berlin correspondent of Bradstreet's writes that a new invention by Maurice Honigmann, engineer, of Aix-la-Chapelle, is exciting considerable interest in technical and industrial circles in Berlin. It is expected to cause great changes in several branches of technical industry. Mr. Honigmann has constructed a boiler to generate steam without fire, and therefore free from all the inconveniences, such as smoke, &c. The construction is based upon the principle that solutions of strong alkaline substances boiling only at 210° to 245°, Celsius, when subject to the influence of steam, absorb it and store up the heat, thus attaining a temperature much higher than that of the steam itself. On this principle Honigmann produces steam by placing a boiler filled with water into a larger one containing boiling alkaline, which is kept boiling

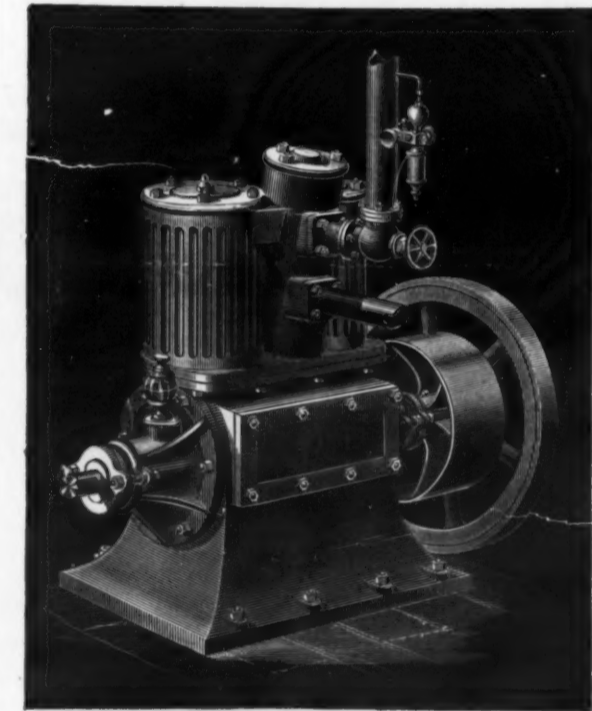
by the spent steam from the engine. Thus the production of steam is continued until, by dilution, the boiling point of the alkaline solution becomes too low for heating purposes, in consequence of its getting too weak. The boiler must then be refilled with a strong solution, whereas the weak one can again be condensed by fire. Experiments have proved hydrate of soda to be a substance especially fitted for this purpose, and these boilers can work for hours without requiring to be refilled. The procedure, besides being less annoying than the common steam engines, producing no smoke or waste steam, is economical, all the spent steam being made use of for heating purposes. A successful experiment was made a short time ago on one of the steamers plying between Berlin and the village of Treptow on the Spree. Other experiments, too, on the tram elevated railways in Berlin are about to be tried.

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THE ONLY FILTER

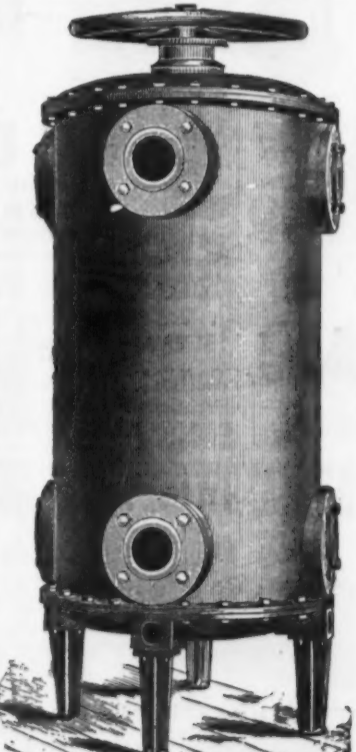
in which the principle of "control" has been perfected. Which exteriorly indicates the condition of the filtering material in it, and the precise position of the working parts. That will give large results with a low head of water. That can always be cleansed without removing the filtering material.

It will operate freely without cleansing for a longer time than any other Filter. It is superior in its construction, operation, and in the quality and quantity of the filtrate furnished, to any other device yet invented.

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Guaranteed to Run Straight, Even Throughout.
No Cross Joints, Unaffected by Damp, Clings well
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WE WARRANT EVERY FELT to work well,
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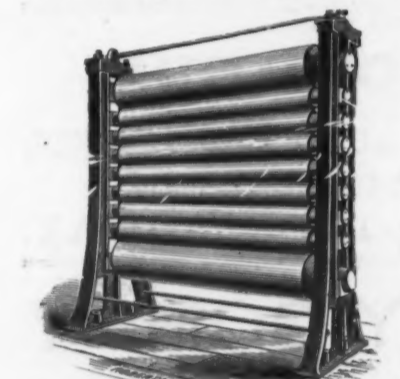
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GROUND BY THEIR PATENT PROCESS.

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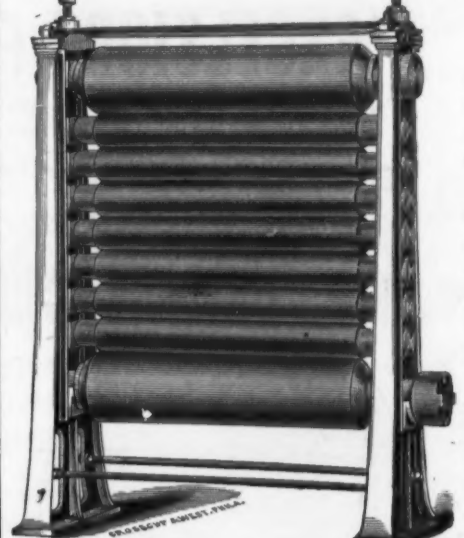


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(Signed) **JAMES M. WILCOX,**
Signature of the Judge.

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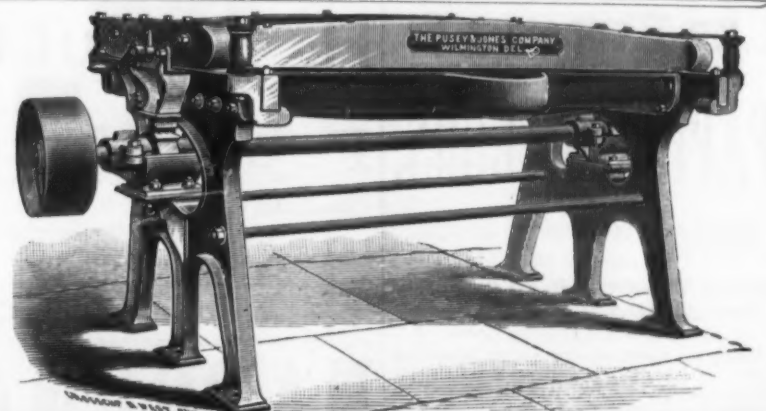
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FOURDRINIER AND CYLINDER WET FELTS, PRESS FELTS AND JACKETS,
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CONTAINS NO FREE ACID.
See following from Prof. S. DANA HAYES, Massachusetts State Chemist.
BOSTON, February 15th, 1879.
Messrs. HARRISON BROTHERS & Co.
Gentlemen:—I have analyzed a sample of "EXTRA CONCENTRATED PEARL ALUM" received from you, with the following results: I find that it contains no free acid, and that there is present 64.11 per cent. of anhydrous sulphate of alumina, which dissolves readily in water. This "Alum" is, therefore, remarkably rich in available sulphate of alumina, and excellent in quality.
Respectfully,
(Signed,) S. DANA HAYES, State Assayer, Massachusetts.
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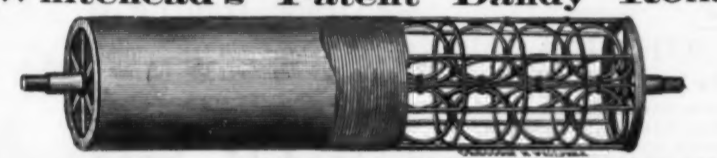
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